RED SEAL

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

National Occupational Analysis

2010 Landscape Horticulturist

Human Resources and Skills Development Canada
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Canada

Occupational Analyses Series

Landscape Horticulturist

2010

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FOREWORD

The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this National Occupational Analysis as the national standard for the occupation of landscape horticulturist.

Background

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to cooperate with provincial and territorial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources and Social Development Canada sponsors a program, under the guidance of the CCDA, to develop a series of National Occupational Analyses (NOAs).

The NOAs have the following objectives:

- to describe and group the tasks performed by skilled workers;
- to identify which tasks are performed in every province and territory;
- to develop instruments for use in the preparation of Interprovincial Red Seal Examinations and curricula for training leading to the certification of skilled workers;
- to facilitate the mobility of apprentices and skilled workers in Canada; and,
- to supply employers, employees, associations, industries, training institutions and governments with analyses of occupations.

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LIST OF PUBLISHED NATIONAL OCCUPATIONAL ANALYSES (Red Seal Trades)

Title	NOC* Code
Agricultural Equipment Technician (2007)	7312
Appliance Service Technician (2005)	7332
Automotive Painter (2009)	7322
Automotive Service Technician (2009)	7321
Baker (2006)	6252
Boilermaker (2008)	7262
Bricklayer (2007)	7281
Cabinetmaker (2007)	7272
Carpenter (2010)	7271
Concrete Finisher (2006)	7282
Construction Electrician (2008)	7241
Construction Craft Worker (2009)	7611
Cook (2008)	6242
Electrical Rewind Mechanic (1999)	7333
Electronics Technician – Consumer Products (1997)	2242
Floorcovering Installer (2005)	7295
Glazier (2008)	7292
Hairstylist (2009)	6271
Heavy Duty Equipment Technician (2009)	7312
Industrial Electrician (2008)	7242
Industrial Mechanic (Millwright) (2009)	7311
Instrumentation and Control Technician (2007)	2243
Insulator (Heat and Frost) (2007)	7293
Ironworker (Generalist) (2006)	7264
Ironworker (Reinforcing) (2006)	7264
Ironworker (Structural/Ornamental) (2006)	7264
Lather (Interior Systems Mechanic) (2007)	7284
Landscape Horticulturist (2010)	2225

* National Occupational Classification

Title	NOC* Code
Machinist (2010)	7231
Metal Fabricator (Fitter) (2008)	7263
Mobile Crane Operator (2009)	7371
Motorcycle Mechanic (2006)	7334
Motor Vehicle Body Repairer (Metal and Paint) (2010)	7322
Oil Burner Mechanic (2006)	7331
Painter and Decorator (2007)	7294
Partsperson (2005)	1472
Plumber (2008)	7251
Powerline Technician (2009)	7244
Recreation Vehicle Service Technician (2006)	7383
Refrigeration and Air Conditioning Mechanic (2009)	7313
Rig Technician (2008)	8232
Roofer (2006)	7291
Sheet Metal Worker (2006)	7261
Sprinkler System Installer (2009)	7252
Steamfitter – Pipefitter (2008)	7252
Tilesetter (2004)	7283
Tool and Die Maker (2005)	7232
Transport Trailer Technician (2008)	7321
Truck and Transport Mechanic (2007)	7321
Welder (2009)	7265

Requests for printed copies of National Occupational Analyses may be forwarded to:

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140 Promenade du Portage, Phase IV, 5th Floor
Gatineau, Quebec K1A 0J9

These publications can be ordered or downloaded online at: www.red-seal.ca. Links to Essential Skills Profiles for some of these trades are also available on this website.

STRUCTURE OF ANALYSIS

To facilitate understanding of the occupation, the work performed by tradespersons is divided into the following categories:

Blocks	the largest division within the analysis that is comprised of a distinct set of trade activities
Tasks	distinct actions that describe the activities within a block
Sub-Tasks	distinct actions that describe the activities within a task
Key Competencies	activities that a person should be able to do in order to be called competent in the trade

The analysis also provides the following information:

Trends	changes identified that impact or will impact the trade, including work practices, technological advances, and new materials and equipment
Related Components	a list of products, items, materials and other elements relevant to the block
Tools and Equipment	categories of tools and equipment used to perform all tasks in the block; these tools and equipment are listed in Appendix A
Context	information to clarify the intent and meaning of tasks
Required Knowledge	the elements of knowledge that an individual must acquire to adequately perform a task

The appendices located at the end of the analysis are described as follows:

Appendix A — Tools and Equipment	a non-exhaustive list of tools and equipment used in this trade
Appendix B — Glossary	definitions or explanations of selected technical terms used in the analysis
Appendix C — Acronyms	a list of acronyms used in the analysis with their full name
Appendix D — Block and Task Weighting	the block and task percentages submitted by each jurisdiction, and the national averages of these percentages; these national averages determine the number of questions for each block and task in the Interprovincial exam
Appendix E — Pie Chart	a graph which depicts the national percentages of exam questions assigned to blocks
Appendix F — Task Profile Chart	a chart which outlines graphically the blocks, tasks and sub-tasks of this analysis

DEVELOPMENT AND VALIDATION OF ANALYSIS

Development of Analysis

A draft analysis is developed by a committee of industry experts in the field led by a team of facilitators from Human Resources and Skills Development Canada. This draft analysis breaks down all the tasks performed in the occupation and describes the knowledge and abilities required for a tradesperson to demonstrate competence in the trade.

Draft Review

The National Occupational Analysis (NOA) development team then forwards a copy of the analysis and its translation to provincial and territorial authorities for a review of its content and structure. Their recommendations are assessed and incorporated into the analysis.

Validation and Weighting

The analysis is sent to all provinces and territories for validation and weighting. Participating jurisdictions consult with industry to validate and weight the document, examining the blocks, tasks and sub-tasks of the analysis as follows:

BLOCKS	Each jurisdiction assigns a percentage of questions to each block for an examination that would cover the entire trade.
TASKS	Each jurisdiction assigns a percentage of exam questions to each task within a block.
SUB-TASKS	Each jurisdiction indicates, with a YES or NO, whether or not each sub-task is performed by skilled workers within the occupation in its jurisdiction.

The results of this exercise are submitted to the NOA development team who then analyzes the data and incorporates it into the document. The NOA provides the individual jurisdictional validation results as well as the national averages of all responses. The national averages for block and task weighting guide the Interprovincial Red Seal Examination plan for the trade.

This method for the validation of the NOA also identifies common core sub-tasks across Canada for the occupation. If at least 70% of the responding jurisdictions perform a sub-task, it shall be considered common core. Interprovincial Red Seal Examinations are based on the common core sub-tasks identified through this validation process.

Definitions for Validation and Weighting

YES	sub-task performed by qualified workers in the occupation in a specific jurisdiction
NO	sub-task not performed by qualified workers in the occupation in a specific jurisdiction
NV	analysis Not Validated by a province/territory
ND	trade Not Designated in a province/territory
NOT COMMON CORE (NCC)	sub-task, task or block performed by less than 70% of responding jurisdictions; these will not be tested by the Interprovincial Red Seal Examination for the trade
National Average %	average percentage of questions assigned to each block and task in Interprovincial Red Seal Examination for the trade

Provincial/Territorial Abbreviations

NL	Newfoundland and Labrador
NS	Nova Scotia
PE	Prince Edward Island
NB	New Brunswick
QC	Quebec
ON	Ontario
MB	Manitoba
SK	Saskatchewan
AB	Alberta
BC	British Columbia
NT	Northwest Territories
YT	Yukon Territory
NU	Nunavut

ANALYSIS

SAFETY

Safe working procedures and conditions, accident prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and work environments can be created by controlling the variables and behaviours that may contribute to accidents or injury.

It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe and accident-free work environment.

It is imperative to apply and be familiar with the Occupational Health and Safety (OH&S) Acts and Workplace Hazardous Materials Information System (WHMIS) Regulations. As well, it is essential to determine workplace hazards and take measures to protect oneself, co-workers, the public and the environment.

Safety education is an integral part of training in all jurisdictions. As safety is an imperative part of all trades, it is assumed and therefore it is not included as a qualifier of any activities. However, the technical safety tasks and sub-tasks specific to the trade are included in this analysis.

SCOPE OF THE LANDSCAPE HORTICULTURIST TRADE

"Landscape Horticulturist" is this trade's official Red Seal occupational title approved by the Canadian Council of Directors of Apprenticeship. This analysis covers tasks performed by landscape horticulturists whose occupational title has been identified by some provinces and territories of Canada under the following names:

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Horticultural Technician						✓							
Horticulture Technician								✓					
Landscape Technician							✓						
Landscape Gardener									✓				
Landscape Worker					✓								
Landscape-Horticulturist										✓			

Landscape horticulturists survey and assess landscape, draw sketches and interpret plans. They construct and maintain gardens, parks, golf courses and other landscape environments. In addition, they advise clients on issues related to horticulture and landscape construction. Landscape horticulturists also propagate, cultivate and study plants, and treat injured and diseased trees and plants. They are employed by landscape designers, architects and contractors, lawn service and tree care establishments, recreation facilities, golf courses, parks, nurseries, greenhouses, and municipal, provincial and federal governments. They may also be self-employed.

Landscape horticulturists work with machinery and equipment ranging from simple hand tools to heavy equipment. They may be responsible for the routine maintenance of tools and equipment. Landscape horticulturists also work with a variety of chemicals such as pesticides, fertilizers and fuels and must be aware of their safe use and government regulations.

Some landscape horticulturists specialize in areas such as landscape design, construction and maintenance, and greenhouse, sod and nursery production. They may work independently or with other professionals such as architects, engineers and municipal planners.

Landscape horticulturists require good communication skills to coordinate and facilitate work with clients, co-workers and other trades. They also require strong analytical and organizational abilities.

Employment in this trade is often seasonal with long hours in the summer months. Much of the work is performed outdoors, while indoor work may involve greenhouse production, interior landscaping, and the sale of plants, landscape materials and supplies. The work may be strenuous and may involve activities such as lifting, climbing, carrying and bending.

With experience and proven competence, landscape horticulturists may advance to supervisory positions or become business owners.

This analysis recognizes similarities or overlaps with the work of other tradespeople such as arborists, utility arborists, bricklayers/masons, heavy equipment operators, electricians, concrete finishers, plumbers and carpenters.

OCCUPATIONAL OBSERVATIONS

The landscape industry must continuously adapt to changing trends in education, certification, legislation and the labour market as they relate to safety, environmental stewardship and conservation. This market-driven industry will continue to evolve through the introduction of new products, implementation of new technology and mechanization to meet the needs of its clients.

There is an increasing demand from the emerging workforce for year round work rather than seasonal employment. More employees seek the opportunity to use the slow winter period to improve their technical skills. There is an increase for specialized skilled workers in the landscape industry. Across North America, consumers and employers request certified landscape horticulturists who are aware of best practices to provide the best products and services.

Safety awareness in the industry is increasing to better protect the workforce and the general public.

The horticultural industry promotes environmental awareness to the public through, among other things, education, research and development. The industry plays a leading role in promoting environmental consciousness and sustainable development. Public awareness of conservation measures to protect our living spaces is empowering the landscape industry to reduce its environmental impact.

The landscape horticultural industry will continue to apply technological advancements to improve its business and workforce skills. Computers, satellite technology, communication equipment and production innovation will enable a cultural focus on improved production, efficiency and quality.

ESSENTIAL SKILLS SUMMARY

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

The essential skills profile for the landscape horticulturist trade indicates that the most important essential skills are **oral communication, critical thinking** and **working with others**.

The application of these skills may be described throughout this document within the competency statements which support each sub-task of the trade. The following are summaries of the requirements in each of the essential skills, taken from the essential skills profile. A link to the complete essential skills profile can be found at www.red-seal.ca.

Reading
Landscape horticulturists require reading skills to review work-related documents such as site plans, work orders, purchase orders, safety documents, product directions and specifications, promotional materials and manuals. They may also read trade publications, catalogues, scientific articles and papers, regulations and building codes.

Document Use
Landscape horticulturists refer to drawings, pictures, grade tables and plans, graphs, tables and other technical information related to their trade. They may also interpret scale drawings of landscape designs and detail drawings, and refer to schematics for irrigation systems.

Writing
Writing skills are used by landscape horticulturists to compose letters or e-mails to clients, contractors and colleagues, and to accurately record information such as safety, maintenance and production information. Landscape horticulturists write investigative reports covering damaged or diseased trees, shrubs, plants and turf.

Oral Communication
Oral communication is a very important skill for landscape horticulturists. A substantial amount of communication is done in order to exchange information, instruct, convey knowledge and to coordinate work with others. They talk to clients about horticultural and landscaping topics such as plant care, landscape design and landscape maintenance. They speak with other professionals including suppliers, architects and engineers to coordinate projects.

Numeracy
Landscape horticulturists use numeracy skills, particularly to calculate financial transactions such as purchasing and sales. They also perform calculations related to measurements such as weight, volume and site areas. They perform numerical estimations of time requirements, slope and quantities of materials.

Thinking Skills
Landscape horticulturists need to be able to problem solve when unexpected situations arise in their work. For instance, inclement weather may impact the ability to proceed as planned. Decision making and critical thinking skills are required to determine how to distribute tasks associated with issues such as plant health care, environmental protection, and selection of plant species, products and practices. Planning and organizing skills are used to coordinate and organize tasks with those of many others involved in the process.

Working with Others
Landscape horticulturists coordinate work with others, including other landscape horticulturists, architects, clients, homeowners, surveyors, engineers, bylaw officers and other contractors. Landscape horticulturists mentor other employees and cooperate in team building.

Computer Use
Landscape horticulturists use computers when researching horticultural information. They may also use applications for communication, word processing, labeling, spreadsheets, databases and global positioning system (GPS).

Continuous Learning
Landscape horticulturists are required to stay abreast of landscaping and horticultural information and practices, and regulatory requirements such as zoning and bylaws. Landscape horticulturists are governed by the regulatory body in the jurisdiction in which they practice. They may be required to participate in developing their learning plans and complete continuous education to maintain their certification.

Trends

Landscape horticulturists are more familiar with computer technology on the work site.

Tools and equipment are more ergonomic and user-friendly.

Motorized equipment is more user-friendly and less noisy.

Information is increasingly being shared among landscape horticulturists.

There are changes to pest and disease control measures that reduce or eliminate dependence on chemical processes.

There is an increase in the use of native and natural materials, LEED buildings and green roof technology.

There is an increased focus on water conservation.

The industry is growing more pest and disease-resistant varieties.

There is a restriction in the movement of plant material across provincial/territorial borders.

Related Components

All components apply.

Tools and Equipment

See Appendix A.

Task 1 Uses and maintains tools and equipment.

Context

Landscape horticulturists must maintain various types of tools and equipment to increase tool longevity and to ensure that work is done in a safe and productive manner.

Proper use of personal protective equipment (PPE) is essential for personal safety. Transporting equipment must be done in a manner to avoid personal injury, and damage to equipment and property.

Required Knowledge

K 1	safety regulations
K 2	tool and equipment operation and function
K 3	types of PPE and their operation
K 4	storage procedures for tools and equipment

K 5	maintenance practices for tools and equipment
K 6	load and weight distribution for transporting equipment
K 7	weight restrictions for transporting equipment
K 8	securing methods for transporting tools and equipment
K 9	regulations that apply to the transporting of material and equipment
K 10	record keeping procedures for maintaining tools and equipment
K 11	engine types and their requirements
K 12	types of hitches and ball sizes
K 13	basic traffic control procedures and bylaws
K 14	licensing requirements for transporting materials and equipment
K 15	storage and sanitation of tools

Sub-task

A-1.01 **Maintains hand tools.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.01.01	clean and disinfect hand tools to ensure proper operation and to prevent transfer of contaminates
A-1.01.02	lubricate hand tools such as secateurs and shears
A-1.01.03	check tools regularly for damage, excessive wear and proper operation
A-1.01.04	store hand tools for organization, safety and security
A-1.01.05	sharpen hand tools such as secateurs, shears and shovels
A-1.01.06	replace components in tools such as secateurs and loppers due to damage and wear

Sub-task

A-1.02 **Maintains power tools.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.02.01	lubricate power tools according to manufacturers' specifications
A-1.02.02	adjust power tools such as chain saws, mowers and power washers
A-1.02.03	check tools for wear, damage and malfunction
A-1.02.04	follow recommended maintenance schedule according to manufacturers' specifications
A-1.02.05	check fluid levels and air pressure
A-1.02.06	grease nipples on motorized equipment
A-1.02.07	sharpen and balance mower blades
A-1.02.08	sharpen tools such as chainsaw and power edgers according to manufacturers' specifications
A-1.02.09	check components such as filters and mufflers
A-1.02.10	refuel equipment according to manufacturers' specification
A-1.02.11	disinfect tools to prevent cross-contamination from site to site
A-1.02.12	store power tools for organization and security

Sub-task

A-1.03 **Maintains measuring equipment.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.03.01	clean and disinfect measuring equipment to ensure proper operation and to prevent transfer of contaminants
A-1.03.02	calibrate measuring equipment such as thermometers, pH meters, levels and EC meters
A-1.03.03	check and replace batteries on measuring equipment
A-1.03.04	check tools for damage, excessive wear and proper operation
A-1.03.05	store measuring equipment for organization, safety and security

Sub-task

A-1.04 Maintains vehicles and motorized equipment.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.04.01	perform and document a circle check of vehicles and motorized equipment to check for items such as lights, plates and brakes
A-1.04.02	clean motorized equipment for reasons such as maintaining optimal operation, detection of leaks and sanitation
A-1.04.03	inspect equipment visually for damage and wear and lock out and tag out as necessary
A-1.04.04	inspect equipment to ensure efficient functioning
A-1.04.05	check position of safety features such as lockout devices, chutes, trimmer and belt guards, rollover protection devices (ROP) and operator presence switches
A-1.04.06	check fluid levels such as oil, coolant and hydraulic fluids according to manufacturers' specifications
A-1.04.07	check and replace components such as spark plugs, belts and pull cords
A-1.04.08	check and adjust air pressure in components such as tires and air compressors
A-1.04.09	check and tighten loose connections and fittings
A-1.04.10	check cutting height and adjust according to client expectations and turf needs

Sub-task

A-1.05 Maintains equipment attachments.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.05.01	grease fittings on equipment such as trailers, aerators and cultivators
A-1.05.02	inspect attachments for damage and wear and lock out and tag out as necessary
A-1.05.03	adjust attachments for parking, travel and operation
A-1.05.04	check hydraulic fluids to ensure optimum and safe operation of equipment

A-1.05.05	clean and disinfect attachments such as drop spreaders, sprayers and mowers
A-1.05.06	replace damaged and worn components such as bushings, blades and tines
A-1.05.07	perform a circle check of equipment attachments to check for items such as lights, plates and brakes
A-1.05.08	check operation of safety brake pin on trailers

Sub-task

A-1.06 Uses personal protective equipment (PPE).

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.06.01	select and use PPE such as ear, eye, hand and foot protection, and safety vests as required for task, tools, equipment, machinery and environment
A-1.06.02	inspect and maintain PPE to ensure it is safe to use
A-1.06.03	store PPE in a dry, protected environment to maintain its integrity
A-1.06.04	check operation and condition of PPE regularly and prior to use
A-1.06.05	check PPE inventory to ensure that there is a ready supply
A-1.06.06	recognize damaged and expired PPE
A-1.06.07	check and replace PPE components according to manufacturers' specifications and workplace requirements

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Sub-task

A-1.07 Transports equipment.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-1.07.01	select trailer type according to equipment and weight restrictions
A-1.07.02	secure loads according to jurisdictional requirements
A-1.07.03	determine route from shop to work site for heavy hauling
A-1.07.04	tie flags to back end of trailers to indicate extended load according to regulations
A-1.07.05	place traffic cones and blocks when loading and unloading trailer

A-1.07.06	follow road closure procedures as necessary
A-1.07.07	comply with licensing requirements for transporting equipment

Task 2 Organizes work.

Required Knowledge

K 1	site assessment and determine logistics
K 2	site hazards
K 3	site access
K 4	types of growing media
K 5	features that require preservation and protection
K 6	scale of drawings
K 7	source and reliability of documentation
K 8	types of documents such as government publications, specifications, and instruction and assembly manuals
K 9	types of records such as vehicle maintenance logs and mileage records
K 10	federal and provincial regulations, and municipal bylaws
K 11	plant identification and nomenclature
K 12	verbal and written communication methods
K 13	common and botanical names for plants
K 14	transportation effects on plants
K 15	acclimatization requirements of plant materials
K 16	WHMIS procedures
K 17	health and safety procedures
K 18	monitoring devices such as recording devices and thermometers
K 19	material handling techniques

Sub-task

A-2.01 **Performs site assessments.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.01.01	assess access points to identify site restrictions and challenges for work
A-2.01.02	perform visual inspection of site and neighbouring properties
A-2.01.03	identify markings for private and public utilities such as cable, natural gas, power and telephone
A-2.01.04	mark locations of private utilities such as irrigation lines, drainage systems and landscape lighting components
A-2.01.05	perform tests such as percolation, core sampling and ribbon tests
A-2.01.06	locate septic field components if necessary
A-2.01.07	identify health and vigour of existing plants for cultural maintenance
A-2.01.08	mark areas to be excavated and/or protected
A-2.01.09	identify grading and drainage patterns
A-2.01.10	identify security requirements

Sub-task

A-2.02 **Uses documentation and reference material.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.02.01	locate required documentation for task
A-2.02.02	interpret documentation such as landscape plans and specifications, site locates, and product instructions
A-2.02.03	refer to WHMIS documentation for procedures such as storage, usage and clean up of hazardous material
A-2.02.04	use catalogues for reasons such as plant identification, comparing products among suppliers, and ordering tools, equipment and plant materials

A-2.02.05	use field books for reference to identify pests and diseases and methods of control
A-2.02.06	use text books and internet for in-depth information regarding plant materials, pests and diseases

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Sub-task

A-2.03 Maintains records.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.03.01	complete safety records such as accident reports and safety meeting sheets according to governmental, industry and company regulations
A-2.03.02	complete work records such as work orders, daily time sheets, change orders and site assessment records
A-2.03.03	complete tool and equipment sign-out and training sign-off sheets
A-2.03.04	provide input for safety inspection reports
A-2.03.05	maintain records related to integrated pest management (IPM) and plant health programs as required
A-2.03.06	compare packing slips with original orders to ensure that shipments are complete
A-2.03.07	provide input for employee evaluations
A-2.03.08	read test results and monitoring devices and record data

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Sub-task

A-2.04 Complies with policies and regulations.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.04.01	review and comply with current governmental and company policies and regulations such as transportation, pest control, conservation of water, habitat preservation and control of spraying
A-2.04.02	enforce safety regulations such as PPE usage, usage of tools and equipment, and handling and storage of materials

A-2.04.03	comply with governmental and company environmental protection agencies such as Department of Fisheries and Oceans (DFO), Canadian Food Inspection Agency (CFIA) and Environment Canada
A-2.04.04	contact authorities for information and to report incidents and occurrences
A-2.04.05	contact public and private locators to locate utility lines and other services
A-2.04.06	verify that personal licensing and certification are current

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Sub-task

A-2.05 Plans daily tasks.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.05.01	organize labour, materials and equipment for task
A-2.05.02	prioritize and sequence tasks to assist in time management and efficient performance
A-2.05.03	delegate tasks to team members to utilize individual strengths
A-2.05.04	modify daily tasks according to challenges such as site hazards, weather, lack of materials and competing projects
A-2.05.05	refer to historical information and previous plans to assist in the daily planning

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Sub-task

A-2.06 Communicates with others.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.06.01	use effective verbal and written communication to relay information to persons such as co-workers, clients, suppliers and office staff
A-2.06.02	mentor apprentices
A-2.06.03	relay information in layperson's terms to clients and the public
A-2.06.04	use universal hand signals to communicate with machine operators, truckers and crane operators

A-2.06.05	communicate visually to direct movement of machinery, equipment and people
A-2.06.06	use communication equipment such as two way radios, computers and cell phones
A-2.06.07	ensure that co-workers understand instructions using methods such as mirroring and repeating back
A-2.06.08	practice active listening
A-2.06.09	report discrepancies and seek direction from supervisor

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Sub-task

A-2.07 **Orders plants and materials.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.07.01	identify size, quality, quantity and type of required materials
A-2.07.02	use botanical nomenclature when ordering plant material to ensure accuracy of orders
A-2.07.03	record order number, tracking number and name of supplier representative
A-2.07.04	compare prices for budget purposes
A-2.07.05	determine time and date of delivery or pick up

Sub-task

A-2.08 **Transports materials.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.08.01	protect plant materials with items such as tarps and anti-desiccants
A-2.08.02	secure materials using approved tie downs
A-2.08.03	load/unload materials using tools and equipment such as dollies and forklifts
A-2.08.04	load materials in sequence and direction to allow for optimal transport and unloading
A-2.08.05	check that loose materials such as wood chips, soil and aggregates are secure and loaded in a manner to prevent spillage

A-2.08.06	cover materials according to governmental and company policies and regulations
A-2.08.07	load and transport material according to weight restriction regulations and load distribution requirements
A-2.08.08	perform and document circle check of vehicle and towed equipment

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Sub-task

A-2.09 Organizes plants, materials and equipment.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.09.01	inspect and verify plants and materials for accuracy, quality, quantity and damage prior to unloading
A-2.09.02	remove and inspect monitoring devices such as temperature recorders and environmental recorders when necessary
A-2.09.03	receive, unload and record plant material and group/match plants by size and species
A-2.09.04	place received products in designated areas to maintain product quality
A-2.09.05	unload and protect materials such as wood chips, soil and aggregates in an organized fashion in designated storage areas to avoid contamination
A-2.09.06	allocate specified storage area for equipment and hazardous materials
A-2.09.07	lay out plants on site according to landscape plans
A-2.09.08	perform final check of required plants, materials and equipment on site
A-2.09.09	receive and record products such as soils, seed, plugs, roots, labels and containers
A-2.09.10	quarantine, reject and dispose of substandard materials

Sub-task

A-2.10 Maintains safe work environment.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-2.10.01	assess site hazards such as high voltage, motorized equipment and working at heights
A-2.10.02	identify required PPE and safety equipment for task
A-2.10.03	follow specified safety procedures such as use of fall arrest, establishing fuelling zones and confined space procedures
A-2.10.04	take action for overhead hazards such as power lines and tree branches to prevent damage and personal injuries
A-2.10.05	maintain a clean and tidy work site to avoid injuries to self and others
A-2.10.06	comply with lockout and tag-out procedures when working on equipment
A-2.10.07	coordinate tasks with other workers to avoid injury to self, co-workers and others
A-2.10.08	place flagging, pylons and signage when working in high traffic areas
A-2.10.09	handle hazardous materials in accordance with government regulations and WHMIS procedures such as disposal, labelling and use of PPE
A-2.10.10	participate in safety meetings and discussions to ensure that information is recorded and distributed to all team members
A-2.10.11	recognize and report unsafe conditions
A-2.10.12	recognize safety and warning signals such as back-up signals, back-up alarms and warning lights
A-2.10.13	contain and dispose of spill contaminants according to regulations
A-2.10.14	coordinate with private and public line locators and emergency response teams

Task 3 — Participates in marketing and sales.

Context

Landscape horticulturists sell products and services that meet and exceed client expectations. Establishing and maintaining customer relations is a critical component of the marketing strategy.

Landscape horticulturists need to manage and control a broad range of inventory products. They also need to know about estimating, tendering and contracting processes.

Required Knowledge

K 1	purchase order and record keeping techniques
K 2	plant identification and nomenclature
K 3	inventory software
K 4	tracking methods
K 5	phyto-inspection and certification
K 6	products such as plants, fertilizers, soils, chemicals and containers
K 7	merchandising and marketing techniques and tools such as business cards, brochures and website
K 8	professional conduct
K 9	customer retention skills and relationship building
K 10	selling skills
K 11	basic estimating of materials
K 12	regulations, permits, specifications, bylaws and restrictions
K 13	installation techniques
K 14	hardscaping products such as paving stones, natural stone, weed barriers and edging
K 15	site access requirements
K 16	site restriction and security requirements
K 17	environmental constraints
K 18	tendering systems and requirements such as bonding, payment schedules, deficiencies and extras
K 19	time allocation to perform tasks required in contract
K 20	equipment and tools required to perform job
K 21	scheduling and critical path analyses

Sub-task

A-3.01 Controls inventory.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-3.01.01	identify and count inventory using manual or electronic systems
A-3.01.02	maintain inventory records
A-3.01.03	identify and sort materials
A-3.01.04	identify restock orders

Sub-task

A-3.02 Sells products and services.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-3.02.01	advise and educate clients on plants, products and services
A-3.02.02	direct customer to seasonal purchases
A-3.02.03	up-sell additional products and services to clients
A-3.02.04	merchandize products and services in an attractive way
A-3.02.05	handle payments for products and services
A-3.02.06	write invoices, calculate taxes and issue receipts for payment
A-3.02.07	communicate with existing customer to advise of special products, prices and services
A-3.02.08	distribute advertising material to clients

Sub-task

A-3.03 Maintains customer relations.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-3.03.01	address client's concerns with tact and politeness
A-3.03.02	practice good public relations by acknowledging regular clients
A-3.03.03	maintain customer record information such as address, phone number, email and product preferences
A-3.03.04	provide after-service follow-up
A-3.03.05	distribute product and service information to clients

Sub-task

A-3.04 Performs estimating, tendering and contracting.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-3.04.01	estimate basic material requirements
A-3.04.02	perform take-off from plan to determine parameters such as quantity, size, type and volume of materials and products
A-3.04.03	calculate price and labour requirements to supply and install products and materials
A-3.04.04	calculate additional costs such as sub-trades, transportation, safety program, contingencies, surcharges, accommodations and overhead
A-3.04.05	communicate with other contractors, suppliers and employees to discuss project logistics such as skill requirements, machinery and products

Task 4 — Analyzes and maintains plant health.

Context

Landscape horticulturists analyze the growing environment to sustain and promote plant health.

Plant health is maintained by providing optimum growing conditions and by managing pests and diseases.

Required Knowledge

K 1	climatic zones
K 2	growing media conditions
K 3	pests and diseases
K 4	signs and symptoms of plant stress
K 5	expected plant heights and widths
K 6	tests such as pH, air quality and nutrient tests
K 7	treatment methods
K 8	plant requirements such as light, hardiness and moisture
K 9	life cycle of pests
K 10	beneficial organisms such as fungi, insects and bacteria
K 11	companion planting procedures
K 12	basic plant botany and physiology
K 13	levels of acceptable damage (threshold)
K 14	Canadian Standards for Nursery Stock (CSNS)
K 15	regional landscape standards
K 16	government regulations related to pesticide use

Sub-task

A-4.01 Identifies plants and plant requirements.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-4.01.01	examine plants visually by observing plant characteristics such as structure and size, fruit, colour and refer to reference material
A-4.01.02	determine cultural requirements of plants such as light, moisture, soil type and nutrients
A-4.01.03	determine health and vigour of plants based on observed plant characteristics

Sub-task

A-4.02 Manages growing conditions.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-4.02.01	determine exposure to conditions such as light, wind, heating, ventilation and air conditioning (HVAC) systems, moisture and reflective heat load based on location
A-4.02.02	use light meter to measure light levels for interior plants
A-4.02.03	collect growing media samples using core samplers
A-4.02.04	check growing media samples manually or by lab analysis for texture, drainage, pH and nutrients
A-4.02.05	interpret lab results
A-4.02.06	analyze water quality by performing tests such as pH, nutrient and contaminant
A-4.02.07	determine air quality that might affect interior and exterior plants
A-4.02.08	take corrective measures such as fertilization, liming, adding organics, neutralizing water and correcting drainage

Sub-task

A-4.03 Manages pests and diseases.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

A-4.03.01	inspect plants visually for presence of pests and beneficial insects
A-4.03.02	identify pests and diseases present
A-4.03.03	inspect plants visually for pest damage such as leaf disfiguration, notching and stippling
A-4.03.04	inspect plants visually for signs and symptoms of plant disease such as discoloration, wilting and defoliation
A-4.03.05	monitor pest populations, spread of disease and damage characteristics
A-4.03.06	establish an action threshold according to economics, aesthetics and plant health
A-4.03.07	select treatment method according to types of pests, diseases and environment
A-4.03.08	apply treatment methods such as cultural, mechanical, biological and chemical in compliance with jurisdictional requirements
A-4.03.09	record and evaluate results of treatment and review on an on-going basis
A-4.03.10	monitor status of plant health on a regular schedule

Trends

New technology requires a broader range of knowledge and skills. This increases the training necessary for landscape horticulturists to perform their tasks.

Safety concerns within the industry are leading to increased commitments to legislated safety programs and best practices.

Increased awareness of the environmental benefits of sustainable landscape is changing the education, certification and practices of the industry.

There is an increase in mechanization in the industry.

There is an increase in solar lighting in landscape construction.

Related Components (include, but not limited to)

Softscape material: growing media, plants, mulch, turf, aquatic plants, tropical plants, bulbs, plant materials, fertilizers, amendments.

Hardscape materials: growing media, drainage components, irrigation components, pre-cast concrete, aggregates, manufacturers' stones, natural stone, lumber, stone, mortar, rebar, geotextiles, filter cloths, erosion mats, river rock, boulders, edging materials, recycled materials.

Structures and features: timber, rails, posts, concrete, metal hangers, steel sheets, nails, screws, composite boards, pumps, hoses, electrical conduits and wiring, water feature components.

Tools and Equipment

See Appendix A.

Task 5 Performs pre-construction activities.

Context

Landscape horticulturists participate in the planning of construction. They also perform pre-construction activities prior to installation. They prepare the site according to landscape design and specifications.

Required Knowledge

K 1	tool use and application
K 2	equipment use and application
K 3	growing media structure and quality
K 4	codes and standards

K 5	hardscape and construction materials
K 6	softscape materials
K 7	survey principles
K 8	design principles
K 9	site assessment principles
K 10	federal and provincial legislation and regulations, and municipal bylaws
K 11	types of landscape plans
K 12	plant science
K 13	plant identification and nomenclature
K 14	scope of landscape horticulturist and other trades
K 15	production management
K 16	safe work practices
K 17	site preservation best practices such as compaction and erosion prevention and reduction
K 18	habitat recognition and preservation
K 19	excavation practices
K 20	drainage techniques

Sub-task

B-5.01 Participates in basic landscape design activities.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-5.01.01	select and use tools such as transits, GPS and measuring wheels
B-5.01.02	measure and inventory existing site conditions to provide information to the design team
B-5.01.03	provide detail support to design team for construction plan
B-5.01.04	use design principles such as texture, color, form and scale to apply creative interpretation of the landscape plan

Sub-task

B-5.02 Interprets landscape plans.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-5.02.01	identify scale to guide site layout and job planning activities
B-5.02.02	identify symbols such as property lines, grades and elevations, and hardscape and softscape elements to determine the scope of work
B-5.02.03	identify project specifications such as planting plan, softscape and hardscape details
B-5.02.04	identify stakeholders such as property owners, designers and engineers for future reference

Sub-task

B-5.03 Participates in job planning activities.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-5.03.01	identify labour expertise and determine production hours
B-5.03.02	review safety plan to ensure safe completion of the project
B-5.03.03	verify term of project and determine sequence of job to ensure project is completed according to plan and budget
B-5.03.04	verify materials and procedures to meet project specifications
B-5.03.05	plan on-site staging such as environmental protection, vehicle parking, storage, portable office and toilets
B-5.03.06	locate private and public utilities to ensure safe completion of project
B-5.03.07	identify and schedule sub-contractors to fulfill the scope of work
B-5.03.08	identify and schedule tools, equipment and attachments to ensure availability

Sub-task

B-5.04 Prepares site.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-5.04.01	select and use hand tools such as engineer levels, transits and hammers
B-5.04.02	select and use equipment such as skid steers, loaders and excavators
B-5.04.03	identify and communicate discrepancies between plans and site conditions
B-5.04.04	preserve existing hardscape and softscape elements such as trees and decks according to plans and specifications
B-5.04.05	remove hazards, debris and other unwanted materials
B-5.04.06	create access to ensure site efficiency and security
B-5.04.07	identify markings of underground and overhead utility hazards to avoid personal injury and damage to utilities
B-5.04.08	locate and cordon off areas to minimize environmental impact
B-5.04.09	install environmental mitigation mechanisms such as filters, silt fencing and storm sewer guards
B-5.04.10	lay out site by marking and staking location of hardscape and softscape elements to be installed
B-5.04.11	establish grade to ensure positive drainage and to meet plans and specifications
B-5.04.12	strip and stockpile topsoil and cut/fill material to establish rough grade according to plans and specifications
B-5.04.13	excavate growing media and place service conduits to support sub-trade activities such as installing irrigation systems and laying fibre optics
B-5.04.14	verify that site is prepared according to specifications and is ready for next phase

Task 6 — Installs softscape.

Context Landscape horticulturists install softscape features that comply with plans, specifications, regulations and codes to ensure the integrity of the installation.

Required Knowledge

K 1	tool use and application
K 2	equipment use and application
K 3	growing media structure and quality
K 4	codes and standards
K 5	hardscape and construction materials
K 6	softscape materials
K 7	design principles
K 8	federal and provincial legislation and regulations, and municipal bylaws
K 9	types of landscape plans
K 10	plant science
K 11	plant identification and nomenclature
K 12	scope of landscape horticulturist and other trades
K 13	production management
K 14	safe work practices
K 15	site preservation best practices such as compaction and erosion prevention and reduction
K 16	excavation practices
K 17	drainage techniques
K 18	plant growing requirements
K 19	water quality management
K 20	interior landscape planting guidelines
K 21	exterior landscape planting guidelines
K 22	sub-irrigation and irrigation
K 23	compaction rates of materials
K 24	seed and fertilizer application rates
K 25	habitat preservation and conservation

Sub-task

B-6.01 **Installs erosion control materials.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.01.01	select and use tools such as shovels, post pounders and knives
B-6.01.02	select and use equipment such as augers, trenchers and loaders
B-6.01.03	move specified erosion control material into desired location
B-6.01.04	lay out and apply erosion control material
B-6.01.05	secure placement of erosion control material to ensure performance
B-6.01.06	verify that erosion control installation meets specifications and is ready for next phase

Sub-task

B-6.02 **Installs growing media.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.02.01	select and use tools such as shovels, picks, rakes and wheelbarrows
B-6.02.02	select and use equipment such as skid steers, loaders and excavators
B-6.02.03	verify that drainage systems are effective and functioning
B-6.02.04	scarify sub-soil with mechanical and manual tools and equipment
B-6.02.05	move growing media into desired location
B-6.02.06	add growing media in lifts and irrigate as specified
B-6.02.07	add and incorporate amendments such as fertilizers, composts and peat moss
B-6.02.08	verify degree of growing media compaction
B-6.02.09	grade growing media by mechanical and manual raking to grading-elevation
B-6.02.10	verify that growing media depth and elevation meet specifications and are ready for next phase

Sub-task

B-6.03 Installs interior landscape plants.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	no	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.03.01	select and use tools such as tree dollies, shovels and rakes
B-6.03.02	select and use equipment such as skid steers and tree gantries
B-6.03.03	prepare plant materials by performing activities such as foliar washing, scarifying root ball and managing nutrient balance
B-6.03.04	monitor plant health throughout installation process
B-6.03.05	move plant materials to desired location
B-6.03.06	lay out plant materials according to plan
B-6.03.07	plant interior landscape plants according to specifications
B-6.03.08	prune plants as required
B-6.03.09	verify moisture content of growing media to ensure adequate irrigation
B-6.03.10	verify that plant installation meets specifications and is ready for next phase
B-6.03.11	protect interior furnishings and surfaces

Sub-task

B-6.04 Installs exterior landscape plants.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.04.01	select and use tools such as tree dollies, shovels and rakes
B-6.04.02	select and use equipment such as boom trucks, and skid steers and attachments
B-6.04.03	prepare plant materials by performing activities such as removal of containers, scarifying root ball and managing nutrient balance
B-6.04.04	monitor plant health throughout installation process
B-6.04.05	move plant materials to desired location
B-6.04.06	lay out plant materials as per plan
B-6.04.07	plant, stake and guy plant materials as specified

B-6.04.08	prune plant materials as required
B-6.04.09	verify moisture content of growing media to ensure adequate irrigation
B-6.04.10	verify that plant installation meets specifications and is ready for next phase

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Sub-task

B-6.05 Installs turf from seed.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.05.01	select and use tools such as rollers, landscape rakes and seed spreaders
B-6.05.02	select and use equipment such as hydro-seeders, seed drills, and tractors and attachments
B-6.05.03	verify seedbed is prepared according to specifications
B-6.05.04	verify that seed selection meets specifications
B-6.05.05	apply seed to prepared area according to specifications
B-6.05.06	apply organic matter to retain moisture and minimize seed movement
B-6.05.07	use landscape rollers to ensure seed is in direct contact with growing media
B-6.05.08	monitor turf regularly to ensure irrigation meets germination requirements
B-6.05.09	verify that seed distribution will result in uniform turf by visual inspection and correct as required

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Sub-task

B-6.06 Installs sod.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.06.01	select and use tools such as rollers, landscape rakes and sod knives
B-6.06.02	select and use equipment such as rollers, and tractors and attachments
B-6.06.03	verify that area to be sodded is prepared according to specifications
B-6.06.04	verify selected sod meets specifications
B-6.06.05	apply fertilizers and amendments as specified
B-6.06.06	lay sod to prepared area according to specifications

B-6.06.07	secure sod using stakes as required
B-6.06.08	use landscape rollers to ensure sod is in direct contact with growing media
B-6.06.09	monitor sod regularly to ensure irrigation meets established requirements
B-6.06.10	verify that sod installation meets specifications

Sub-task

B-6.07 **Installs mulch.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-6.07.01	select and use tools such as wheelbarrows, landscape rakes and pitch forks
B-6.07.02	select and use equipment such as skid steers, blower trucks and loaders
B-6.07.03	verify that area to be mulched is prepared according to specifications
B-6.07.04	verify that mulch materials such as wood, aggregates and composts meet specifications
B-6.07.05	apply mulch according to specifications
B-6.07.06	verify that mulch installation meets specifications

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Task 7 Installs hardscape.

Context Landscape horticulturist installs hardscape features that comply with plans, specifications, regulations and codes to ensure the integrity of the installation.

Required Knowledge

K 1	tool use and application
K 2	equipment use and application
K 3	growing media structure and quality
K 4	codes and standards
K 5	hardscape and construction materials
K 6	softscape materials
K 7	design principles
K 8	federal and provincial legislation and regulations, and municipal bylaws

K 9	types of landscape plans
K 10	plant science
K 11	plant identification and nomenclature
K 12	scope of landscape horticulturist and other trades
K 13	production management
K 14	safe work practices
K 15	site preservation best practices such as compaction and erosion prevention and reduction
K 16	excavation practices
K 17	drainage techniques
K 18	water quality management
K 19	sub-irrigation and irrigation
K 20	landscape structures such as pergolas, fences and decks
K 21	low-voltage lighting systems
K 22	habitat recognition and preservation
K 23	water features such as ponds, fountains, water falls and streams

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Sub-task

B-7.01 Installs drainage systems.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.01.01	select and use tools such as shovels, picks and wheelbarrows
B-7.01.02	select and use equipment such as excavators, trenchers and skid steers
B-7.01.03	excavate sub-soil to required grade and depth
B-7.01.04	store or remove excavated materials
B-7.01.05	move specified drainage system materials into desired location
B-7.01.06	lay out and assemble drainage components
B-7.01.07	verify drainage system operation
B-7.01.08	backfill drainage system with specified materials to finished grade
B-7.01.09	verify that installation meets specifications and is ready for next phase

Sub-task

B-7.02 Installs landscape structures.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.02.01	select and use tools such as power saws, power drills and hammers
B-7.02.02	select and use equipment such as excavators, and skid steers and attachments
B-7.02.03	lay out and mark construction area
B-7.02.04	excavate as required
B-7.02.05	prepare foundation suitable for structure installation
B-7.02.06	construct specified structure such as decks, pergolas and gazebos
B-7.02.07	verify that installation meets specifications and is ready for next phase
B-7.02.08	clean surfaces using tools such as brooms, water and power blowers
B-7.02.09	repair damage that has occurred as a result of construction
B-7.02.10	dispose of and recycle waste materials

Sub-task

B-7.03 Installs walkway, patio, driveway and parking lot materials.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.03.01	select and use tools such as shovels, picks, chisels and wheelbarrows
B-7.03.02	select and use equipment such as excavators, plate compactors and skid steers
B-7.03.03	lay out and mark construction area
B-7.03.04	excavate as specified and stabilize by compaction
B-7.03.05	store or remove excavated materials
B-7.03.06	place geotextiles as required for base stability
B-7.03.07	add aggregate base and compact in lifts according to specifications
B-7.03.08	create or maintain adequate grade to ensure positive drainage
B-7.03.09	secure edge restraints as required for finished material

B-7.03.10	place bedding materials such as sand, limestone screening, high performance bedding materials and concrete bases if required
B-7.03.11	screed bedding materials as required
B-7.03.12	lay materials such as flagstones, concrete, aggregates and paving stones
B-7.03.13	clean surfaces using tools such as brooms and power blowers
B-7.03.14	apply joint materials such as mortars, sand and polymeric sand according to manufacturers' specifications
B-7.03.15	compact surfaces if required according to manufacturers' specifications
B-7.03.16	clean and seal if required according to manufacturers' specifications
B-7.03.17	verify that installation meets specifications and is ready for next phase
B-7.03.18	clean and repair damage that has occurred as a result of construction
B-7.03.19	dispose of and recycle waste materials

Sub-task

B-7.04 **Installs steps and retaining walls.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.04.01	select and use tools such as shovels, picks, stone chisels and wheelbarrows
B-7.04.02	select and use equipment such as excavators, plate compactors and skid steers
B-7.04.03	lay out and mark construction area
B-7.04.04	excavate as specified and stabilize by compaction
B-7.04.05	store or remove excavated materials
B-7.04.06	place geotextile materials as required for stability
B-7.04.07	add aggregate base and compact in lifts according to specifications
B-7.04.08	place bedding materials such as sand, limestone screening and concrete footing if required
B-7.04.09	screed bedding materials as required
B-7.04.10	build wall and steps by performing actions such as stacking and assembling courses, and by using materials such as timber, natural stone and manufactured stones according to specifications
B-7.04.11	place drainage systems and backfill according to specifications
B-7.04.12	install adhesives or mortar to secure capstones and treads

B-7.04.13	clean surfaces using tools such as brooms, power blowers and mechanical sweepers
B-7.04.14	verify that installation meets specifications and is ready for next phase
B-7.04.15	repair damage that has occurred as a result of construction
B-7.04.16	dispose of and recycle waste materials

Sub-task

B-7.05 **Installs irrigation systems.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.05.01	select and use tools such as pipe cutters, crimping tools, trenching shovels and wheelbarrows
B-7.05.02	select and use equipment such as excavators, trenchers, and skid steers and attachments
B-7.05.03	excavate or trench to required grade and depth
B-7.05.04	store or remove excavated materials
B-7.05.05	lay out and assemble irrigation components according to manufacturers' specifications and irrigation plan
B-7.05.06	verify that irrigation systems are not leaking
B-7.05.07	backfill irrigation systems with specified materials to finished grade
B-7.05.08	set head height and nozzle of irrigation system to specifications
B-7.05.09	verify that installation meets specifications and is ready for next phase
B-7.05.10	clean and repair damage that has occurred as a result of construction
B-7.05.11	dispose of and recycle waste material

Sub-task

B-7.06 Installs water features.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.06.01	select and use tools such as shovels, picks, chisels and wheelbarrows
B-7.06.02	select and use equipment such as excavators, loaders and skid steers
B-7.06.03	lay out and mark construction area
B-7.06.04	excavate as required
B-7.06.05	store or remove excavated materials
B-7.06.06	place geotextile materials according to specifications
B-7.06.07	place drains, water supply components, filtration systems and electrical conduits
B-7.06.08	place membranes according to specifications
B-7.06.09	apply adhesives, foams and mortar to secure and seal assembly
B-7.06.10	complete assembly of water supply components, filtration systems and lighting
B-7.06.11	add water, run water systems and check for leaks
B-7.06.12	adjust water features to ensure optimum performance
B-7.06.13	add aggregates and decorative features such as rocks, garden art and foot bridges according to specifications
B-7.06.14	verify and adjust water flow, sound and aesthetics
B-7.06.15	drain water and clean all components
B-7.06.16	refill water features and add ecosystem enhancement products such as beneficial bacteria and pH amendments as required
B-7.06.17	place aquatic plants as required
B-7.06.18	verify that installation meets specifications
B-7.06.19	repair damage that has occurred as a result of construction
B-7.06.20	dispose of and recycle waste materials

Sub-task

B-7.07 Installs low voltage landscape lighting.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

B-7.07.01	select and use tools such as wire strippers, volt meters, ladders and trenching shovels
B-7.07.02	dig trenches to required depth
B-7.07.03	store or remove excavated materials
B-7.07.04	lay out and assemble lighting components according to manufacturers' specifications and lighting plan
B-7.07.05	verify operation of the lighting system and check voltage
B-7.07.06	program lighting controller and adjust fixtures
B-7.07.07	set lighting for desired effects
B-7.07.08	clean and repair damage that has occurred as a result of construction
B-7.07.09	dispose of and recycle waste materials

Trends

There is an increase in the use of native, non-invasive, and edible and organic plant materials and a more targeted use of pest controls.

A higher degree of attention is paid to plant health due to more effective maintenance practices and environmental awareness.

Due to increased regulations, integrated pest management processes for the managing of plant health have become more prevalent.

There is an increase in the use of technology to track maintenance activities and to assist in asset inventory.

Tools and equipment that produce fewer emissions, less noise and less vibration are more in demand.

There is an increased awareness of water conservation.

Related Components (include, but not limited to)

Softscape material: growing media, plants, mulch, turf, aquatic plants, tropical plants, bulbs, plant materials, fertilizers, amendments.

Hardscape materials: drainage components, irrigation components, pre-cast concrete, aggregates, manufacturers' stones, natural stone, lumber, stone, mortar, rebar, geotextiles, filter cloths, erosion mats, river rock, boulders, edging materials, recycled materials.

Structures and features: timber, rails, posts, concrete, metal hangers, steel sheets, nails, screws, composite boards, pumps, hoses, electrical conduits and wiring, water feature components.

Tools and Equipment

See Appendix A.

Task 8 Maintains softscape.

Context

Landscape horticulturists are responsible for maintaining all interior and exterior plant materials to sustain plant health, maintain the integrity of the design and to provide a pleasing aesthetic environment.

Required Knowledge

K 1	plant identification (and labelling)
K 2	growing media conditions such as moisture levels, Ph levels and nutrient levels

K 3	drainage and drain locations
K 4	fertilizer requirements and schedules
K 5	liming requirements and schedules
K 6	location of irrigation components
K 7	edging, cultivation and pruning techniques
K 8	industry standards for maintaining interior and exterior softscape
K 9	nutrient requirements for interior and exterior softscape
K 10	watering requirements and scheduling
K 11	climate conditions
K 12	methods of weed control
K 13	customer/client expectations
K 14	integrated pest management
K 15	methods of maintaining the design concept
K 16	turf maintenance practices
K 17	light requirements of interior softscape
K 18	cleaning materials and techniques for interior softscape
K 19	planting and transplanting techniques
K 20	storage requirements for softscape materials
K 21	turf varieties
K 22	cultural practices for turf maintenance
K 23	types of tools, equipment and attachments
K 24	types of PPE required for tasks and equipment
K 25	basic plant botany and physiology

Sub-task

C-8.01 Maintains growing media.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-8.01.01	visually inspect growing media and plants for signs and symptoms of health to determine needs of growing media and plants
C-8.01.02	assess growing media composition for conditions such as texture, moisture levels and porosity using tools such as probes and ribbon tests

C-8.01.03	cultivate growing media with tools such as garden fork, cultivator and hoe for reasons such as aeration, weed control and maintenance of growing media structure
C-8.01.04	amend growing media to maintain optimum growing conditions
C-8.01.05	collect soil and water samples, and send to lab as required to determine fertility and deficiency levels
C-8.01.06	interpret lab results to determine growing media amendments required

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Sub-task

C-8.02 Maintains grass/turf.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-8.02.01	perform visual inspection of turf area to determine conditions such as color, thinning, grades and drainage
C-8.02.02	identify turf varieties
C-8.02.03	identify turf pests and diseases
C-8.02.04	perform growing media analysis to determine substrate conditions
C-8.02.05	irrigate turf according to species, environmental conditions and usage
C-8.02.06	cut turf using tools and equipment according to turf varieties, usage of site and climate conditions
C-8.02.07	aerate turf using tools and equipment according to growing media analysis, usage of site and climate conditions
C-8.02.08	fertilize and adjust pH according to growing media analysis, usage of site and climate conditions
C-8.02.09	overseed turf for reasons such as reparation, rejuvenation and introduction of new varieties
C-8.02.10	topdress turf using tools and equipment for reasons such as enhancement of substrate profile, and promotion of growth of existing and newly-introduced turf
C-8.02.11	dethatch turf to promote optimum growth conditions

Sub-task

C-8.03 **Maintains interior softscape.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	no	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-8.03.01	identify interior plants and their needs such as water, light and nutrients
C-8.03.02	identify pests and diseases
C-8.03.03	perform visual inspection to determine plant health
C-8.03.04	irrigate and fertilize plants according to plant needs using manual or automated methods
C-8.03.05	clean foliage and containers for aesthetics and plant health
C-8.03.06	prune plants for reasons such as dead, disease, damage and interfering (D,D,D,I), plant health growth control and aesthetics
C-8.03.07	transplant plants for reasons such as growth control, relocation of plants and prevention of root girdling
C-8.03.08	divide plants to reduce plant size, propagate and improve aesthetic value and vigour
C-8.03.09	mulch interior beds and containers for reasons such as moisture retention, weed suppression, growing media temperature moderation and aesthetics
C-8.03.10	perform seasonal plant rotation for health and aesthetic reasons
C-8.03.11	protect furnishings and surfaces

Sub-task

C-8.04 **Maintains exterior softscape.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-8.04.01	identify exterior plants and their needs such as water, light and nutrients
C-8.04.02	identify pests and diseases
C-8.04.03	perform visual inspection to determine plant health
C-8.04.04	irrigate and fertilize plants according to plant needs using manual or automated methods

C-8.04.05	cultivate growing media with tools such as garden fork, cultivator and hoe for reasons such as aeration, weed control and maintenance of growing media structures
C-8.04.06	prune plants for reasons such as dead, disease, damage and interfering (D,D,D,I), plant health growth control and aesthetics
C-8.04.07	transplant plants for reasons such as growth control, relocation of plants and prevention root girdling
C-8.04.08	divide plants to reduce plant size, propagate and improve aesthetic value and vigour
C-8.04.09	perform seasonal planting and removal of plants such as annuals, biennials and bulbs
C-8.04.10	apply seasonal protection or hardening-off practices to ensure plant survival through winter
C-8.04.11	remove weeds for plant health and aesthetics
C-8.04.12	mulch beds and containers for reasons such as moisture retention, weed suppression, growing media temperature moderation and aesthetics
C-8.04.13	edge beds for reasons such as bed definition and aesthetics
C-8.04.14	perform site cleanup such as litter pickup, removing excess clippings and cleaning sidewalks
C-8.04.15	repair or remove staking and guying materials to prevent plant damage

Task 9 — Maintains hardscape.

Context Landscape horticulturists are responsible for maintaining all hardscape systems and features. Other tradespersons may be required to complete tasks in the maintenance of hardscape lighting and irrigation.

Required Knowledge

K 1	drainage requirements
K 2	site layout
K 3	operation of mechanical systems
K 4	water quality and pressure requirements for irrigation and water features
K 5	low voltage electrical lighting systems and their components
K 6	basic electrical practices and principles
K 7	types of hard surface materials such as wood, concrete and asphalt
K 8	types of irrigation systems and their components
K 9	installation practices for hardscape systems

K 10	types of drains
K 11	effects of frost heaving on hard surfaces and footings
K 12	causes and results of efflorescence and spalling
K 13	types of landscape structures such as fences, seating areas and bird baths
K 14	hardscape components

Sub-task

C-9.01 Maintains drainage systems.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.01.01	check drains to ensure proper operation
C-9.01.02	inspect and replace screens to avoid blockage
C-9.01.03	remove debris from drainage systems to ensure optimal flow
C-9.01.04	maintain grades according to original design to allow for adequate flow
C-9.01.05	inspect performance of drains by flushing drainage systems with water
C-9.01.06	ensure drain covers are secure
C-9.01.07	winterize drainage systems

Sub-task

C-9.02 Maintains walkways, patios, driveways and parking lots.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.02.01	visually inspect structural integrity of hard surfaces for safety and aesthetic reasons
C-9.02.02	remove debris and undesirable growth
C-9.02.03	apply preservatives, stains and sealants on hard surfaces to provide ease of cleaning, longevity and aesthetics
C-9.02.04	repair wood surface damage such as rotting, splintering and cracking

C-9.02.05	top up jointing sand on interlock surfaces according to manufacturers' specifications
C-9.02.06	repair damage to aggregate-based hard surfaces such as paving stones, gravel, asphalt and concrete

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Sub-task

C-9.03 Maintains irrigation systems.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.03.01	start up systems by charging and running systems through a test cycle
C-9.03.02	visually inspect site to determine functioning of systems
C-9.03.03	identify problems with irrigation systems and troubleshoot and repair as necessary
C-9.03.04	visually inspect system components such as screens, heads and pipes for damage such as clogging, cracks and corroded wiring and repair or adjust as required
C-9.03.05	check functioning of zone valves according to manufacturers' specifications
C-9.03.06	adjust irrigation controllers according to environmental conditions
C-9.03.07	clean and clear sensors to ensure optimum operation
C-9.03.08	winterize systems by blowing out irrigation systems

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Sub-task

C-9.04 Maintains landscape lighting.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.04.01	turn on systems to detect defects
C-9.04.02	visually check light fixtures, fuses and transformers for function and damage, and repair and replace as required
C-9.04.03	repair low voltage wiring
C-9.04.04	check and adjust lighting coverage and positioning

C-9.04.05	clean and clear sensor to ensure optimum operation
C-9.04.06	check lighting timing and adjust program according to seasonal requirements

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Sub-task

C-9.05 Maintains water features.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.05.01	inspect water features for defects such as cracks, leaks, plugged filters, and faulty gaskets and seals
C-9.05.02	charge systems to prime pumps and start up operation for the season
C-9.05.03	set and reset timers according to manufacturers' specifications
C-9.05.04	clean components such as filters, screens, nozzles and pumps
C-9.05.05	run systems to ensure functioning according to manufacturers' specifications
C-9.05.06	inspect water for conditions such as lack of clarity, presence of algae and floating debris
C-9.05.07	test water for conditions such as pH levels and presence of bacteria
C-9.05.08	drain and refill features for seasonal maintenance
C-9.05.09	clean basins manually and/or with aquatic cleaning products
C-9.05.10	remove and protect plants and fish during winter or when cleaning the features if required
C-9.05.11	winterize features by disassembling, covering and draining to avoid damage
C-9.05.12	disconnect feature components and store according to manufacturers' specifications
C-9.05.13	clean fountains by draining water and washing features

Sub-task

C-9.06 **Maintains steps and retaining walls.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.06.01	inspect steps and walls to detect defects that require remediation
C-9.06.02	perform minor repairs such as replacing cracked stones and rotting timbers
C-9.06.03	clean steps and walls using tools and equipment such as pressure washers and brooms
C-9.06.04	seal steps and retaining walls as required

Sub-task

C-9.07 **Maintains landscape structures.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	ND	ND

Key Competencies

C-9.07.01	inspect structures for defects such as peeling paint, rotting wood, heaving and settling
C-9.07.02	perform minor repairs such as replacing rotting and cracked timber, levelling structures, and staining or painting wood structures
C-9.07.03	recognize hazards of structures and take appropriate action

BLOCK D PRODUCTION OF PLANT MATERIALS (NOT COMMON CORE)

Trends	There is an increase of mechanisation of production facilities reducing labour inputs. Customers are increasingly looking for new plant varieties, dwarf plants, native plants, edible plants and more mature plants. Biodegradable and recyclable containers are increasingly being sought out due to environmental concerns. Producers are becoming environmentally conscious with the goal of reducing their carbon footprint. Due to an increase in government regulations concerning the conservation, capture and recycling of water, industry is continuously seeking new technologies to reduce environmental impact and production costs. Alternative energy systems are being considered to contain cost and reduce environmental impact.
Related Components (include, but not limited to)	Water, fertilizers, growing media, media and amendments, containers, irrigation system components, heating, venting and cooling system components, chemicals, fuels, labels, packing and shipping materials, files and records, plant coverings, ground covers, barriers, alarm and security system components, stakes, signage.
Tools and Equipment	See Appendix A.

Task 10 Manages growing facilities. (NOT COMMON CORE)

Context

Landscape horticulturists are involved in the planning and building of greenhouse structures and nursery facilities. Greenhouse structures may include glass and poly growing houses. Nursery structures and facilities may include shade houses, climate control storage sheds and header houses. These structures, facilities and systems need to be maintained to operate efficiently to grow and store plant materials.

Required Knowledge

K 1	control systems such as heating, cooling and ventilation, misting and CO_2 injection systems
K 2	monitoring devices such as thermometers, relative humidity meters and light meters
K 3	light and heat regulating materials such as shade cloths, thermal blankets and liquid shade
K 4	winterizing procedures such as blowing-out and draining-down lines, pumps and filters, installing anti-freeze and insulating pipes
K 5	tools and equipment used to maintain and winterize systems and equipment
K 6	irrigation systems such as flood, ebb and flow, and drip line
K 7	water conservation and recapture systems such as tanks and ponds
K 8	sanitation practices such as bleaching, barriers to entry, and staff and customer notices
K 9	site preparation and construction of growing structures such as gutter-connected greenhouses, free standing greenhouses, cold frames, and shelter and shade houses
K 10	monitoring systems such as climatic control alarm systems and security systems
K 11	generator systems
K 12	irrigation systems for field and greenhouse applications
K 13	facility contents such as benches, carts and wagons

Sub-task

D-10.01 Manages structures and contents. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-10.01.01	prepare grade and base for construction of structures
D-10.01.02	assist in building greenhouses and growing structures such as shade houses, header houses, cold frames and hoop houses
D-10.01.03	assemble and install contents such as benches, nursery carts, and climate controls, lighting and irrigation systems
D-10.01.04	inspect and maintain greenhouses and growing structures using methods such as replacing greenhouse covers, weed barriers and shade cloths.
D-10.01.05	use and maintain generators for emergency backup systems
D-10.01.06	inspect, maintain and repair contents using methods such as replacing bolts and bearings, and oiling and greasing components

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Sub-task

D-10.02 Manages climate control and components. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-10.02.01	read environmental climate monitoring equipment such as automated and computerized control systems, thermometers, relative humidity meters and light meters to determine inside and outside climate conditions
D-10.02.02	calibrate instruments and equipment to establish standard settings and accuracy
D-10.02.03	select and use hand tools to perform maintenance tasks
D-10.02.04	perform basic repairs on heating, cooling and ventilation systems such as replacing fan belts, thermocouples and vent tubes to limit downtime
D-10.02.05	maintain heating, cooling, and ventilation systems to ensure efficient operation
D-10.02.06	conduct regular inspections and follow check lists to ensure integrity of heating, cooling and ventilation systems

D-10.02.07	winterize heating and cooling systems when shutting greenhouse for winter to protect from frozen lines, and ice and water damage of equipment
D-10.02.08	use shading materials and thermal blankets to regulate light and heat levels
D-10.02.09	use artificial lights to ensure adequate light levels according to crop requirements
D-10.02.10	regulate humidity levels by using systems such as misting and venting
D-10.02.11	maintain pre-established gas levels by using CO_2 injection systems

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Sub-task

D-10.03 **Manages irrigation and fertigation systems. (NOT COMMON CORE)**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-10.03.01	read water monitoring equipment such as flow, pH, electrical conductivity (EC), parts per million (ppm) meters and thermometers to determine water quality and consumption
D-10.03.02	select and use hand tools to perform maintenance tasks
D-10.03.03	calibrate instruments and equipment such as controllers and zone valves to establish standard settings and accuracy
D-10.03.04	perform basic repairs such as replacing distribution and drip lines, nozzles and injector systems on irrigation and fertigation systems
D-10.03.05	maintain irrigation and fertigation systems to ensure efficient operation
D-10.03.06	conduct regular inspections and follow check lists to ensure integrity of irrigation and fertigation systems
D-10.03.07	winterize irrigation and fertigation systems to protect equipment from frozen lines, and ice and water damage
D-10.03.08	inspect water retention, capture and recycling systems to ensure that the systems are functioning according to design parameters, and meeting industry standards and government regulations
D-10.03.09	maintain water retention, capture and recycling systems using methods such as filter replacement, ultraviolet (UV) bulb replacement and chemical treatment to preserve water quality

Sub-task

D-10.04 Manages sanitary environment. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-10.04.01	conduct regular inspections and follow check lists to ensure sanitation practices such as hand washing, plant quarantine and the use of foot baths are followed
D-10.04.02	select cultural, physical and/or chemical methods to maintain continuous sanitation and pest control
D-10.04.03	sanitize equipment, tools, benches and containers to minimize pests
D-10.04.04	select and use tools and equipment such as hoes, sprayers and weed barriers to control pests
D-10.04.05	perform regular maintenance activities on adjacent buildings and properties to manage sanitation and promote plant health

Task 11 Manages greenhouse crops. (NOT COMMON CORE)

Context Landscape horticulturists are involved in the planning and production of greenhouse plant materials. These products are distributed in retail and wholesale facilities, and in the landscaping industry.

Required Knowledge

K 1	chemical application equipment
K 2	propagation methods such as seeding, cutting, division and grafting
K 3	specialized propagation methods such as air layering, layering and micro-propagation
K 4	propagation materials such as rooting hormones and growing media
K 5	transplanting methods such as manual and mechanical
K 6	storage facilities such as cold rooms, refrigerators and freezers
K 7	containers such as flats, pots and decorative containers
K 8	growing media such as custom formulations, composts and non-soil products
K 9	plant growing requirements such as nutrients, light and water
K 10	pest and disease identification and treatment methods such as biological and low-impact chemical controls

K 11	other plant growth limiting factors such as over-watering, lack of nutrients and physical damage
K 12	sampling and testing methods
K 13	plant identification and nomenclature
K 14	federal and provincial legislation and regulations, and municipal bylaws
K 15	personal protection equipment (PPE), environmental safety and product safety
K 16	species and cultivars and their growing regime
K 17	hardening-off procedures such as reduction of temperature, changing fertility programs and reduction of light
K 18	acceptable standards and quality of products
K 19	effective product storage and requirements
K 20	packing materials such as boxes, nursery carts, pallets and trays
K 21	monitoring devices
K 22	basic plant botany and physiology
K 23	storage and sanitation of tools

Sub-task

D-11.01 Propagates plant materials. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-11.01.01	select and use tools and equipment
D-11.01.02	sow seeds in flats and containers using methods such as hand seeding and mechanical seeding
D-11.01.03	take leaf, root and stem cuttings
D-11.01.04	treat cuttings according to species requirements using methods such as callusing, hormone treatment and leaf incisions
D-11.01.05	harvest and divide roots, tubers, bulbs and corms
D-11.01.06	graft scion wood and buds to selected rootstocks and stems
D-11.01.07	maintain propagated materials until viable for transplanting, harvesting and/or growing on
D-11.01.08	label plants and record all propagation information

Sub-task

D-11.02 Transplants plants. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-11.02.01	select most viable and true-to-type stock for transplanting
D-11.02.02	select containers according to intended use
D-11.02.03	select growing media according to species requirements and containers
D-11.02.04	select and use tools and equipment to transplant
D-11.02.05	plant plants and water
D-11.02.06	place plants in optimum growing environment
D-11.02.07	label plants and record all transplant information

Sub-task

D-11.03 Grows crops. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-11.03.01	record information such as fertilizer application, treatments, temperatures, cropping schedules and inventory management
D-11.03.02	maintain and monitor water requirements to optimize plant health and development, and apply interventions such as pH adjustments, nutrient adjustments and watering levels
D-11.03.03	maintain and monitor crop for pests to ensure threshold levels are not exceeded
D-11.03.04	maintain and monitor crop growth to ensure proper health and development rate
D-11.03.05	apply interventions such as pinching, hormone growth application, temperature, fertility and water adjustments to manage crop growth as required
D-11.03.06	monitor crops to identify signs and symptoms of disease, insects and weeds and apply corrective actions
D-11.03.07	monitor crops to identify signs of nutritional and physiological disorders, and apply corrective actions

D-11.03.08	monitor growing media fertility levels using methods such as soil and tissue sampling, testing and analyzing to determine corrective action
D-11.03.09	harden off crops to prepare for sale

Sub-task

D-11.04 Ships greenhouse crops. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-11.04.01	identify ready-for-market crops according to order specifications
D-11.04.02	assemble products in staging or marshalling area
D-11.04.03	select plants and label orders using recognized handling and protection techniques
D-11.04.04	inspect plant material before shipping to ensure it is free of diseases and relatively free of insects
D-11.04.05	package orders for transport using identified packing materials such as boxes, nursery carts, pallets and trays
D-11.04.06	add monitoring devices to orders when necessary
D-11.04.07	record shipping information such as inventory adjustments, bills of lading and Phytosanatory Certificates
D-11.04.08	arrange orders and load on appropriate transportation
D-11.04.09	advise customers on status of orders, and delivery time and date

Task 12 — Manages nursery, field and container crops. (NOT COMMON CORE)

Context

Landscape horticulturists are involved in the planning and production of nursery, field and container-grown plant materials. These products are distributed in retail and wholesale facilities, and in the landscaping industry.

Required Knowledge

K 1	personal protection equipment (PPE), environmental safety and product safety
K 2	seed treatments such as scarification, stratification, temperature treatment, mechanical treatment and chemical treatment for disease control and germination according to species
K 3	chemical application equipment and products specific to target pests
K 4	propagation methods such as seeding, cutting, division and grafting
K 5	specialized propagation methods such as layering and micro-propagation
K 6	propagating tools and equipment such as grafting knives, potting machines and secateurs
K 7	storage facilities such as cold rooms, refrigerators and freezers
K 8	pruning techniques according to acceptable horticultural practices
K 9	methods for shaping plant materials
K 10	growing media characteristics such as porosity, water holding capacity, uniformity and weight
K 11	plant culture specific to container grown plant materials to avoid issues such as spiralling and pot-bound roots
K 12	government regulations pertaining to the movement and quarantine of identified species
K 13	production scheduling for inventory management
K 14	propagation materials such as rooting hormones, fungicide and growing media
K 15	transplanting methods such as manual and mechanical
K 16	containers such as wire baskets, fibre and plastic pots
K 17	growing media and soil amendment practices
K 18	plant growing requirements such as nutrients, light and water
K 19	pest identification and treatment methods such as biological and low-impact chemical controls
K 20	other plant growth limiting factors such as over-watering, and physical and environmental damage

K 21	sampling and testing methods
K 22	plant identification and nomenclature
K 23	federal and provincial legislation and regulations, and municipal bylaws
K 24	species and cultivars and their growing regime
K 25	timing of harvest related to plant physiology
K 26	acceptable standards and quality of products
K 27	effective product storage requirements
K 28	packing materials such as boxes, nursery carts, pallets and trays
K 29	monitoring devices
K 30	field tools and equipment
K 31	storage and sanitation of tools

Sub-task

D-12.01 **Propagates nursery, field and container crops. (NOT COMMON CORE)**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-12.01.01	select and use tools and equipment
D-12.01.02	take leaf, root and stem cuttings
D-12.01.03	treat cuttings according to species requirements using methods such as callusing, hormone treatment and leaf incisions
D-12.01.04	harvest and divide roots, tubers, bulbs and corms
D-12.01.05	graft scion wood and buds to selected rootstocks and stems
D-12.01.06	maintain propagated material until viable for transplanting, harvesting and/or growing on
D-12.01.07	label plants and record propagation information such as row marking and tagging
D-12.01.08	maintain fields and beds employing established horticultural and sustainable field management practices such as ploughing, fallowing, incorporating organic matter, cultivating, fertilizing and pH adjustment
D-12.01.09	prepare fields and beds for activities such as lining out, pot-in-pot and seeding
D-12.01.10	plant out field materials such as liners, whips, roots and bulbs

D-12.01.11	direct seed using mechanical field seeding equipment for crops such as nursery sod and herbaceous plants
D-12.01.12	select suitable growing media for container-grown plant materials
D-12.01.13	pot up container crops from plant formats such as liners, rooted cuttings, plugs and roots
D-12.01.14	stake plant materials when required
D-12.01.15	mulch and irrigate fields as required

Sub-task

D-12.02 **Grows nursery, field and container crops. (NOT COMMON CORE)**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-12.02.01	select and use tools and equipment
D-12.02.02	record information such as fertilizer applications, treatments, temperatures, cropping schedules and inventory management
D-12.02.03	maintain and monitor water requirements to optimize plant health and development
D-12.02.04	apply interventions such as pH adjustments, nutrient adjustments and watering levels to optimize plant health and development
D-12.02.05	maintain and monitor crops for pests to ensure threshold levels are not exceeded
D-12.02.06	maintain and monitor crop growth to ensure proper health and development rate
D-12.02.07	apply interventions such as pruning, mowing, hormone growth application and temperature, fertility and water adjustments to ensure proper health and development rate
D-12.02.08	monitor crops to identify signs and symptoms of disease, insects and weeds and apply corrective actions
D-12.02.09	monitor crops to identify signs of nutritional and physiological disorders, and apply corrective actions

D-12.02.10	monitor growing media fertility levels using methods such as soil and tissue samplings, testing and analyzing to determine corrective actions
D-12.02.11	winterize and protect field and container crops using procedures such as installing snow fences, heeling in nursery stock, utilizing shelter houses and applying animal repellents
D-12.02.12	perform spring maintenance activities such as removal of protective materials, spacing out containers, pruning, plant culling and checking labels

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Sub-task

D-12.03 Harvests nursery, field and container crops. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-12.03.01	identify and dig harvest-ready plant materials using tools and equipment such as tree spades and mechanical diggers
D-12.03.02	select suitable root containment products for trees and shrubs such as containers, baskets, and balled and burlap (B&B)
D-12.03.03	select container grown plant materials for potting on and filling orders
D-12.03.04	wash and divide bare root plant materials including perennials, vines, shrubs and trees for activities such as cold storage potting up, replanting and filling orders
D-12.03.05	cut sod using mechanical sod cutters and palletize
D-12.03.06	collect seeds and cuttings for further propagation
D-12.03.07	grade plant materials according to size, conditions and industry standards

Sub-task

D-12.04 **Ships nursery, field and container crops. (NOT COMMON CORE)**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	no	no	yes	yes	yes	yes	no	ND	ND	ND

Key Competencies

D-12.04.01	identify market-ready crops according to order specifications
D-12.04.02	assemble products in staging or marshalling area
D-12.04.03	select plants and label orders using recognized handling techniques
D-12.04.04	inspect plant material before shipping to ensure it is free of diseases and relatively free of insects
D-12.04.05	protect and package orders for transport using identified packing materials such as boxes, nursery carts, pallets and trays
D-12.04.06	add monitoring devices to orders when necessary
D-12.04.07	record shipping information such as inventory adjustments, bill of lading and Phytosanitary Certificates
D-12.04.08	advise customers on status of orders, and delivery time and date
D-12.04.09	select and use equipment such as forklifts, skid steers and tractors to load plant materials onto appropriate transportation
D-12.04.10	secure and cover loads using materials such as tarps, security straps and nets
D-12.04.11	select and use equipment such as flat deck trucks and spider lifts to load and ship sod to customer

APPENDICES

APPENDIX A TOOLS AND EQUIPMENT

Hand Tools

axes
backpack sprayer
box cutters
brick carriers
brick splitter
brooms
calculator
cart
chains
chisels
clay pick
clearing axes
core samplers (probe)
crimpers
crowbars
cultivator (manual)
dethatching rake
dibblers
dolly
files
flags
garden forks
grease guns
hammers (hand, sledge)
hand plane
hand tamper
handheld watering equipment
handsaws (crosscut, back, pruning, hack)
hedge shears
hoes
knives (budding and grafting, sod)
ladders (step, extension, orchard)
landscape rakes
lawn roller
loppers
mallet
paving stone cart
paving stone cutter
paving stone extractor
pick axes
picks
pipe cutters
pitch forks
pliers (various types)
plumb line
pole pruners
pole saw
post hole auger
post maul
post pounder
pruning shears
pry bar
punch
rakes (various types)
roller
scaffolding
screeding bars
screwdrivers (various types)
scythe
secateurs
seed/fertilizer spreader
sharpening tools
shoring equipment
shovels (coal, clam, scoop/barn, spade, garden)
side cutters
sod lifter
soil screener
spades (various types)
string line
tap and die
tape measure
tarps
tie downs (straps, chains)
transit level
transplant table
tree cart
trowels

Hand Tools (continued)

water key
weed digger
wheelbarrow, trolley
wheel chocks
wrenches (various types)

Power Tools

air seeder
chainsaw (pole)
circular saw
compressor
concrete saw (dry, wet)
demolition hammer (electric)
demolition hammer (pneumatic)
electric drill
fertilizer injector
grinder
hammer drill
heat gun
lathe
mitre/chop saw
mortar/cement mixer
mower/mulcher
powder-actuated tools
power auger
power cultivator (rototiller)
power seeder/power spreader
power soil screener
power sprayer
powered wheelbarrow
reciprocating saw
sabre saw
table saw
torch
tree spade
trencher
vacuum (wet/dry, leaf)
walk-behind aerator
wet saw

Measuring Equipment

anemometer
barometer
compaction measuring device
EC meter
flow meter
gas meter
GPS
hygrometer
laser distance measure
levels (line, hand, zip, laser)
light meter
measuring wheel
pH meter
planimeter
scale ruler
scales
soil tester
tape measure
thermometer
tire pressure meter
water meter

Motorized Equipment

backhoe
baggers
bale breaker
bed edger
blender (power)
blowers (backpack, hand held, push, earth auger)
brush cutter
chipper
clearing saw

Motorized Equipment (continued)

conveyor belt
edgers
elevated work platforms
excavator
flat filler
fork lift
front end loader
generators
guillotine
hedge trimmer (extension, long reach)
hydro-seeding equipment
lawn/weed trimmers (gas & electric)
man lift
mortar mixer
peat shredder
plate compactor
plate tamper
pot filler
power dethatcher
power rake
powered rollers
pressure washer
pumps
ram compactor (jumping jack)
riding mowers/mulchers
shredder
skid-steer loader
sod cutter
soil screener
spider
steam jenny
sterilizers
tractors
trencher (irrigation)
trucks
turf and tree sprayer

Equipment Attachments

aerator
auger/post hole digger
blade
bucket
cultivator
discer
harrow
leaf vacuum
overseeder
plough
power sweeper
rototiller
snow blower
soil profiler
spray equipment
top dresser
tow behind dethatcher
tow behind trencher
trailer
tree spade
U-blade
vacuum

PPE and Safety Equipment

chaps/ballistic pants
chemical suit
cones
ear protection
eye protection (glasses, shields)
eye wash kit
fall protection equipment (harness)
fire extinguisher
first aid kits
flares
gloves
hard hat
lanyard
particle masks
reflective shirts, jackets
respirators
safety boots or shoes
safety vests

PPE and Safety Equipment (continued)

scabbard
spill kit
traffic cones

Office Equipment

camera
communication devices
computers
drafting scale 1-100
laminator
printer
thermal printer

APPENDIX B GLOSSARY

climate control systems	include heating, humidity, venting and cooling systems as well as cold storage facilities
compost	humus made by decomposing vegetative matter in a compost bin or pile. It is used in landscaping as a soil conditioner and fertilizer
drainage	movement of water through the soil. After a normal amount of irrigation, water should percolate through the soil within a few hours. If pools of water remain or the soil appears excessively wet to the touch, the area may be poorly drained
fertigation	application of fertilizers, soil amendments, or other water soluble products through an irrigation system
geotextile	synthetic material that is usually water-permeable, it is spread under paths or mulch to serve as a weed barrier or modify drainage
growing facilities	structures and systems used for the production of plant materials
hardscape	components of the design and construction of any landscape project that deals with a range of materials that include brick, stone, wood, metals or other natural or fabricated materials used in construction of landscape structures, furnishings or features
harvest	selecting plant materials from greenhouses, fields and standing yards for sale, storage and for further grow on activities
herbaceous	having no persistent woody stem above ground
mulch	layer of bark, peat moss, compost, shredded leaves, hay or straw, lawn clippings, gravel, paper, plastic or other material spread over the soil around the base of plants primarily to modify the effects of climate. During the growing season, mulch can help retard evaporation, inhibit weeds, moderate soil temperature and add nutrients. Fresh layers of mulch are also spread to enhance aesthetics. In the winter, mulch of evergreen boughs, coarse hay or leaves is used to protect plants from freezing
nursery	place where young plants or trees are raised
nutrients	nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron and other elements needed by growing plants and supplied by minerals and organic matter in soil and by fertilizers

potting-on	moving a plant from a smaller container up to a bigger container in the growing on process
potting-up	the process of filling containers with soil and plant material
propagate	production of more plants by seeds, cuttings, grafting or other methods
pruning	removal of roots, stems, branches and leaves in the production and maintenance of plant materials to provide form, health and development
retaining wall	wall built to stabilize a slope and keep soil from sliding or eroding downhill
sod	carpet-like sheets of turf about 3/4 inch thick, 1-1/2 feet wide and approx. 6 feet long. Sheets may be laid over prepared soil to establish new lawns. Many types of grasses are available
softscape	plant and soil component of any landscape design or construction project
spalling	wear, disintegration
sub-soil	light-colour soil layer of varying consistencies found beneath the topsoil. It contains little or no humus

APPENDIX C ACRONYMS

B&B	Balled and Burlap
CAHRC	Canadian Agricultural Human Resource Council
CFIA	Canada Food Inspection Agency
CNLA	Canadian Nursery Landscape Association
CO_2	Carbon Dioxide
CSNS	Canadian Standards for Nursery Stock
DFO	Department of Fisheries and Oceans
EC	Electro Conductivity
GPS	Global Positioning System
HVAC	Heating, Ventilation and Air Conditioning
IPM	Integrated Pest Management
LEED	Leadership in Energy and Environmental Design
MSDS	Material Safety Data Sheet
OH&S	Occupational Health and Safety
PPE	Personal Protective Equipment
ppm	parts per million
ROP	Rollover Protection Devices
UV	Ultraviolet
WHMIS	Workplace Hazardous Materials Information System

APPENDIX D BLOCK AND TASK WEIGHTING

BLOCK A OCCUPATIONAL SKILLS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	40	10	15	44	10	35	25	32	35	15	ND	ND	ND	29%

Task 1 Uses and maintains tools and equipment.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	30	50	26	20	30	30	27	30	20	ND	ND	ND	29%

Task 2 Organizes work.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	40	40	25	30	50	25	30	28	20	10	ND	ND	ND	30%

Task 3 Participates in marketing and sales.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	10	10	5	20	10	10	10	20	10	10	ND	ND	ND	12%

Task 4 Analyzes and maintains plant health care.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	20	20	20	24	20	35	30	25	40	60	ND	ND	ND	29%

BLOCK B LANDSCAPE CONSTRUCTION

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	30	60	30	28	70	25	25	28	20	35	ND	ND	ND	39%

Task 5 Performs pre-construction activities.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	40	50	30	40	30	40	40	40	15	ND	ND	ND	35%

Task 6 Installs softscape.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	30	30	37	20	35	30	30	25	50	ND	ND	ND	32%

Task 7 Installs hardscape.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	40	30	20	33	40	35	30	30	35	35	ND	ND	ND	33%

BLOCK C LANDSCAPE MAINTENANCE

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	20	30	50	28	20	25	25	18	20	50	ND	ND	ND	32%

Task 8 Maintains softscape.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	70	60	60	70	90	70	80	60	65	65	ND	ND	ND	69%

Task 9 Maintains hardscape.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	40	40	30	10	30	20	40	35	35	ND	ND	ND	31%

BLOCK D PRODUCTION OF PLANT MATERIALS (NOT COMMON CORE)

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	0	5	0	0	15	25	22	25	0	ND	ND	ND	NCC*

Task 10 Manages growing facilities. (NOT COMMON CORE)

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	20	0	20	0	0	20	30	35	20	0	ND	ND	ND	NCC

Task 11 Manages greenhouse crops. (NOT COMMON CORE)

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	40	0	20	0	0	40	35	33	35	0	ND	ND	ND	NCC

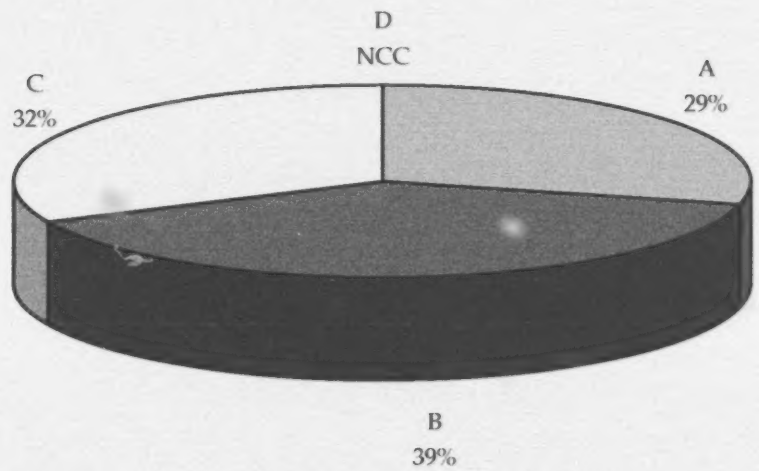
Task 12 Manages nursery, field and container crops. (NOT COMMON CORE)

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	NCC
%	40	0	60	0	0	40	35	32	45	0	ND	ND	ND	

* NOT COMMON CORE

APPENDIX E

PIE CHART*



TITLES OF BLOCKS

BLOCK A	Occupational Skills	BLOCK C	Landscape Maintenance
BLOCK B	Landscape Construction	BLOCK D	Production of Plant Materials (NOT COMMON CORE)

*Average percentage of the total number of questions on an interprovincial examination, assigned to assess each block of the analysis, as derived from the collective input from workers within the occupation from all areas of Canada. Interprovincial examinations typically have from 100 to 150 multiple-choice questions.

APPENDIX F

TASK PROFILE CHART — Landscape Horticulturist

BLOCKS	TASKS	SUB-TASKS				
A – OCCUPATIONAL SKILLS	1. Uses and maintains tools and equipment.	1.01 Maintains hand tools.	1.02 Maintains power tools.	1.03 Maintains measuring equipment.	1.04 Maintains vehicles and motorized equipment.	1.05 Maintains equipment attachments.
		1.06 Uses personal protective equipment (PPE).	1.07 Transports equipment.			
	2. Organizes work.	2.01 Performs site assessments.	2.02 Uses documentation and reference material.	2.03 Maintains records.	2.04 Complies with policies and regulations.	2.05 Plans daily tasks.
		2.06 Communicates with others.	2.07 Orders plants and materials.	2.08 Transports materials.	2.09 Organizes plants, materials and equipment.	2.10 Maintains safe work environment.
	3. Participates in marketing and sales.	3.01 Controls inventory.	3.02 Sells products and services.	3.03 Maintains customer relations.	3.04 Performs estimating, tendering and contracting.	
	4. Analyzes and maintains plant health.	4.01 Identifies plants and plant requirements.	4.02 Manages growing conditions.	4.03 Manages pests and diseases.		
B – LANDSCAPE CONSTRUCTION	5. Performs pre-construction activities.	5.01 Participates in basic landscape design activities.	5.02 Interprets landscape plans.	5.03 Participates in job planning activities.	5.04 Prepares site.	

BLOCKS	TASKS	SUB-TASKS				
	6. Installs softscape.	6.01 Installs erosion control materials.	6.02 Installs growing media.	6.03 Installs interior landscape plants.	6.04 Installs exterior landscape plants.	6.05 Installs turf from seed.
		6.06 Installs sod.	6.07 Installs mulch.			
	7. Installs hardscape.	7.01 Installs drainage systems.	7.02 Installs landscape structures.	7.03 Installs walkway, patio, driveway and parking lot materials.	7.04 Installs steps and retaining walls.	7.05 Installs irrigation systems.
		7.06 Installs water features.	7.07 Installs low voltage landscape lighting.			
C – LANDSCAPE MAINTENANCE	8. Maintains softscape.	8.01 Maintains growing media.	8.02 Maintains grass/turf.	8.03 Maintains interior softscape.	8.04 Maintains exterior softscape.	
	9. Maintains hardscape.	9.01 Maintains drainage systems.	9.02 Maintains walkways, patios, driveways and parking lots.	9.03 Maintains irrigation systems.	9.04 Maintains landscape lighting.	9.05 Maintains water features.
		9.06 Maintains steps and retaining walls.	9.07 Maintains landscape structures.			
D – PRODUCTION OF PLANT MATERIALS (NOT COMMON CORE)	10. Manages growing facilities. (NOT COMMON CORE)	10.01 Manages structures and contents. (NOT COMMON CORE)	10.02 Manages climate control and components. (NOT COMMON CORE)	10.03 Manages irrigation and fertigation systems. (NOT COMMON CORE)	10.04 Manages sanitary environment. (NOT COMMON CORE)	

BLOCKS	TASKS	SUB-TASKS			
	11. Manages greenhouse crops. (NOT COMMON CORE)	11.01 Propagates plant materials. (NOT COMMON CORE)	11.02 Transplants plants. (NOT COMMON CORE)	11.03 Grows crops. (NOT COMMON CORE)	11.04 Ships greenhouse crops. (NOT COMMON CORE)
	12. Manages nursery, field and container crops. (NOT COMMON CORE)	12.01 Propagates nursery, field and container crops. (NOT COMMON CORE)	12.02 Grows nursery, field and container crops. (NOT COMMON CORE)	12.03 Harvests nursery, field and container crops. (NOT COMMON CORE)	12.04 Ships nursery, field and container crops. (NOT COMMON CORE)